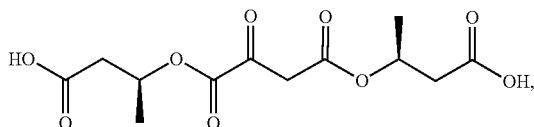
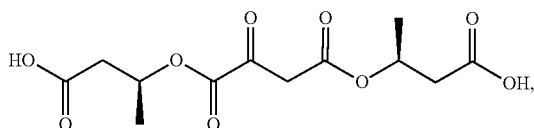


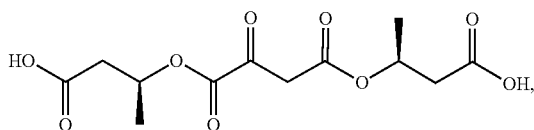
a dipotassium salt of



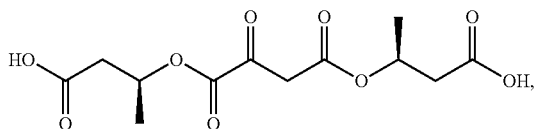
a sodium salt of



a disodium salt of



a sodium potassium salt of



or a solvate thereof of any one of these.

- [0137] E. A pharmaceutical composition comprising
- [0138] a compound of any one of Paragraphs A-D; and
- [0139] a pharmaceutically acceptable carrier.
- [0140] F. A pharmaceutical composition comprising
- [0141] an effective amount of a compound of any one of Paragraphs A-D; and
- [0142] a pharmaceutically acceptable carrier.
- [0143] G. The pharmaceutical composition of Paragraph F, wherein the effective amount is an amount of the compound effective to increase cellular respiration and/or glycolytic flux in a subject.
- [0144] H. The pharmaceutical composition of Paragraph F or Paragraph G, wherein the effective amount is an amount effective to treat a neurodegenerative disease in a subject.
- [0145] I. The pharmaceutical compounds of any one of Paragraphs F-H, wherein the effective amount is an amount effective to treat Alzheimer's disease in a subject.
- [0146] J. The pharmaceutical composition of any one of Paragraphs F-I, wherein the effective amount is an amount effective to treat Parkinson's disease in a subject.
- [0147] K. The pharmaceutical composition of any one of Paragraphs F-J, wherein the effective amount is an amount effective to treat amyotrophic lateral sclerosis in a subject.

- [0148] L. The pharmaceutical composition of any one of Paragraphs F-K, wherein the effective amount is an amount effective to treat multiple sclerosis in a subject.
- [0149] M. The pharmaceutical composition of any one of Paragraphs F-L, wherein the effective amount is an amount effective to treat epilepsy in a subject.
- [0150] N. The pharmaceutical composition of any one of Paragraphs F-M, wherein the effective amount is an amount effective to treat a mitochondrial disorder in a subject.
- [0151] O. The pharmaceutical composition of any one of Paragraphs F-N, wherein the effective amount is an amount effective to improve athletic performance in a subject.
- [0152] P. The pharmaceutical composition of any one of Paragraphs F-O, wherein the effective amount is an amount effective to improve cognitive performance in a subject.
- [0153] Q. A method for increasing cellular respiration in a cell, the method comprising contacting the cell with a compound of any one of Paragraphs A-D.
- [0154] R. The method of Paragraph O, wherein the cell is a neuronal cell.
- [0155] S. A method of increasing a ratio of cytosolic NAD^+ to NADH in a cell, the method comprising contacting the cell with a compound of any one of Paragraphs A-D.
- [0156] T. The method of Paragraph S, wherein the cell is a neuronal cell.
- [0157] U. A method of increasing glycolytic flux in a cell, the method comprising contacting the cell with a compound of any one of Paragraphs A-D.
- [0158] V. The method of Paragraph U, wherein the cell is a neuronal cell.
- [0159] W. A method of increasing cellular respiration in a subject, the method comprising administering to the subject an effective amount of a compound of any one of Paragraphs A-D.
- [0160] X. The method of Paragraph W, wherein the subject is suffering from a neurodegenerative disease.
- [0161] Y. The method of Paragraph W or Paragraph X, wherein the neurodegenerative disease comprises Alzheimer's disease.
- [0162] Z. The method of any one of Paragraphs W-Y, wherein the effective amount is an amount effective to treat Alzheimer's disease.
- [0163] AA. The method of any one of Paragraphs W-Z, wherein the neurodegenerative disease comprises Parkinson's disease.
- [0164] AB. The method of any one of Paragraphs W-AA, wherein the effective amount is an amount effective to treat Parkinson's disease.
- [0165] AC. The method of any one of Paragraphs W-AB, wherein the subject is suffering from amyotrophic lateral sclerosis.
- [0166] AD. The method of any one of Paragraphs W-AC, wherein the effective amount is an amount effective to treat amyotrophic lateral sclerosis.
- [0167] AE. The method of any one of Paragraphs W-AD, wherein the subject is suffering from multiple sclerosis.
- [0168] AF. The method of any one of Paragraphs W-AE, wherein the effective amount is an amount effective to treat multiple sclerosis.